

L Number	Hits	Search Text	DB	Time stamp
1	3	((("6120938") or ("6139815") or ("5180888"))).PN.	USPAT	2003/07/11 19:58
2	2	((("5891588") or ("5714280"))).PN.	USPAT	2003/07/11 19:59
-	24986	429/\$7.ccls.	USPAT	2003/07/11 10:41
-	294	429/\$7.ccls. and (lithium same phosphate)	USPAT	2003/05/14 16:42
-	102	(429/\$7.ccls. and (lithium same phosphate)) and 429/218.1,224,229,231.95.ccls.	USPAT	2003/05/14 16:42
-	196	429/\$7.ccls. and (lithium near5 phosphate)	USPAT	2003/05/14 16:42
-	535	(429/\$7.ccls. and (lithium near5 phosphate)) and4	USPAT	2003/05/14 16:43
-	74	(429/\$7.ccls. and (lithium near5 phosphate)) and ((429/\$7.ccls. and (lithium same phosphate)) and 429/218.1,224,229,231.95.ccls.)	USPAT	2003/05/14 17:05
-	1	("5910382").PN.	USPAT	2003/05/14 17:17
-	1	("5286582").PN.	USPAT	2003/05/14 17:27
-	27	sintered same nonsintered	USPAT	2003/05/14 17:27
-	0	(sintered same nonsintered) and 429/231.8.ccls.	USPAT	2003/05/14 17:28
-	418	429/231.8.ccls.	USPAT	2003/05/14 17:28
-	522	429/231.8.ccls.	USPAT; US-PGPUB	2003/05/14 17:28
-	79	429/231.8.ccls. and sinter\$4	USPAT; US-PGPUB	2003/05/14 17:33
-	20	429/231.8.ccls. and (sinter\$4 same press\$3)	USPAT; US-PGPUB	2003/05/14 17:33
-	1	5910382.pn.	USPAT	2003/07/11 10:51
-	0	5910382.pn. and (sintered or sinter or nonsintered or sintering)	USPAT	2003/07/11 10:42
-	0	5910382.pn. and (carbon)	USPAT	2003/07/11 10:42
-	1	5910382.pn. and (anode or negative)	USPAT	2003/07/11 10:49
-	25178	429/\$7.ccls.	USPAT	2003/07/11 10:49
-	78	429/\$7.ccls. and (coke same sinter\$3)	USPAT	2003/07/11 10:49
-	9	"5910382"	USPAT	2003/07/11 10:51
-	67938	"9" and sinter\$3	USPAT	2003/07/11 10:51
-	2	"5910382" and sinter\$3	USPAT	2003/07/11 16:49
-	7	429/\$7.ccls. and sinter\$3 and polyanion	USPAT	2003/07/11 10:54
-	47	429/\$7.ccls. and sinter\$3 and NASICON	USPAT	2003/07/11 10:57
-	9	429/\$7.ccls. and (sinter\$3 same carbon\$5) and NASICON	USPAT	2003/07/11 14:04
-	5	((("4465747") or ("4526844") or ("4959281") or ("4985317") or ("5514490"))).PN.	USPAT	2003/07/11 14:05
-	2	((("4465747") or ("4526844") or ("4959281") or ("4985317") or ("5514490"))).PN.) and sinter\$4	USPAT	2003/07/11 14:08
-	386	429/221.ccls.	USPAT	2003/07/11 14:08
-	431	429/231.8.ccls.	USPAT	2003/07/11 14:08
-	17	429/221.ccls. and 429/231.8.ccls.	USPAT	2003/07/11 14:08
-	0	(429/221.ccls. and 429/231.8.ccls.) and sinter\$4	USPAT	2003/07/11 14:08
-	800	429/221.ccls. or 429/231.8.ccls.	USPAT	2003/07/11 14:08
-	80	(429/221.ccls. or 429/231.8.ccls.) and (sinter\$4 same (carbon or carbonaceous or graphite or coke or amorphous))	USPAT	2003/07/11 14:17
-	26	((429/221.ccls. or 429/231.8.ccls.) and (sinter\$4 same (carbon or carbonaceous or graphite or coke or amorphous))) and (sinter\$4 same binder)	USPAT	2003/07/11 14:18
-	4	"5910382" and nonaqueous	USPAT	2003/07/11 16:49
-	1	5910382.pn. and electrolyte	USPAT	2003/07/11 16:56
-	1	5910382.pn. and (carbon or carbonaceous or graphite or coke)	USPAT	2003/07/11 17:48
-	0	5910382.pn. and (diameter)	USPAT	2003/07/11 17:48
-	1	5910382.pn. and (size)	USPAT	2003/07/11 17:49
-	0	5910382.pn. and (microns)	USPAT	2003/07/11 17:56
-	17	"LiFePO.sub.4"	USPAT	2003/07/11 18:00
-	4	"LiFePO.sub.4" and diameter	USPAT	2003/07/11 18:00
-	9	"LiCoPO.sub.4"	USPAT	2003/07/11 18:02
-	4	"LiCoPO.sub.4" and diameter	USPAT	2003/07/11 18:24
-	4	("LiCoPO.sub.4" and diameter) not ("LiFePO.sub.4" and diameter)	USPAT	2003/07/11 18:00

-	3	"LiCoPO.sub.4" and (particle near3 (diameter or size))	USPAT	2003/07/11 18:01
-	5	"LiNiPO.sub.4"	USPAT	2003/07/11 18:02
-	9	"LiCoPO.sub.4"	USPAT	2003/07/11 18:02
-	17	"LiFePO.sub.4"	USPAT	2003/07/11 18:02
-	12	"LiNiPO.sub.4"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 18:03
-	17	"LiCoPO.sub.4"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 18:03
-	60	"LiFePO.sub.4"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 18:03
-	14	"LiMnPO.sub.4"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 18:03
-	4	"LiCuPO.sub.4"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 18:03
-	2	"LiZnPO.sub.4"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 18:03
-	0	"LiCdPO.sub.4"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 18:04
-	72	"LiNiPO.sub.4" or "LiCoPO.sub.4" or "LiFePO.sub.4" or "LiMnPO.sub.4" or "LiCuPO.sub.4" or "LiZnPO.sub.4" or "LiCdPO.sub.4"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 18:04
-	41	("LiNiPO.sub.4" or "LiCoPO.sub.4" or "LiFePO.sub.4" or "LiMnPO.sub.4" or "LiCuPO.sub.4" or "LiZnPO.sub.4" or "LiCdPO.sub.4") and (particle near3 (diameter or size))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 18:05
-	32	("LiNiPO.sub.4" or "LiCoPO.sub.4" or "LiFePO.sub.4" or "LiMnPO.sub.4" or "LiCuPO.sub.4" or "LiZnPO.sub.4" or "LiCdPO.sub.4") and sinter\$4	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 18:05
-	21	("LiNiPO.sub.4" or "LiCoPO.sub.4" or "LiFePO.sub.4" or "LiMnPO.sub.4" or "LiCuPO.sub.4" or "LiZnPO.sub.4" or "LiCdPO.sub.4") and (sinter\$4 same (carbon or graphite or amorphous or carbonaceous))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 19:52
-	21	((("LiNiPO.sub.4" or "LiCoPO.sub.4" or "LiFePO.sub.4" or "LiMnPO.sub.4" or "LiCuPO.sub.4" or "LiZnPO.sub.4" or "LiCdPO.sub.4") and sinter\$4) and ((("LiNiPO.sub.4" or "LiCoPO.sub.4" or "LiFePO.sub.4" or "LiMnPO.sub.4" or "LiCuPO.sub.4" or "LiZnPO.sub.4" or "LiCdPO.sub.4") and (sinter\$4 same (carbon or graphite or amorphous or carbonaceous)))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 18:06
-	15	((("LiNiPO.sub.4" or "LiCoPO.sub.4" or "LiFePO.sub.4" or "LiMnPO.sub.4" or "LiCuPO.sub.4" or "LiZnPO.sub.4" or "LiCdPO.sub.4") and (particle near3 (diameter or size))) and ((("LiNiPO.sub.4" or "LiCoPO.sub.4" or "LiFePO.sub.4" or "LiMnPO.sub.4" or "LiCuPO.sub.4" or "LiZnPO.sub.4" or "LiCdPO.sub.4") and (sinter\$4 same (carbon or graphite or amorphous or carbonaceous)))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/11 18:06
-	7	"5705296"	USPAT	2003/07/11 18:24
-	4	"5705296" and sinter\$4	USPAT	2003/07/11 18:24

FILE 'HOME' ENTERED AT 17:16:08 ON 11 JUL 2003

=> file reg

COST IN U.S. DOLLARS

SINCE FILE

ENTRY

TOTAL

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'REGISTRY' ENTERED AT 17:16:16 ON 11 JUL 2003

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STRUCTURE FILE UPDATES: 10 JUL 2003 HIGHEST RN 546060-09-7

DICTIONARY FILE UPDATES: 10 JUL 2003 HIGHEST RN 546060-09-7

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STN Note 27, Searching Properties in the CAS Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> s (0.01-2)/Li and (1-2)/Fe and 1/P and 4/O

90633 (0.01-2)/LI

682619 (1-2)/FE

833525 1/P

3109357 4/O

L1 299 (0.01-2)/LI AND (1-2)/FE AND 1/P AND 4/O

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

ENTRY

TOTAL

SESSION

FULL ESTIMATED COST

17.68

17.89

FILE 'CAPLUS' ENTERED AT 17:17:35 ON 11 JUL 2003

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FILE COVERS 1907 - 11 Jul 2003 VOL 139 ISS 3

FILE LAST UPDATED: 10 Jul 2003 (20030710/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l1
 L2 379 L1

=> 2 and lithium
 2 IS NOT A RECOGNIZED COMMAND
 The previous command name entered was not recognized by the system.
 For a list of commands available to you in the current file, enter
 "HELP COMMANDS" at an arrow prompt (=>).

=> s l2 and lithium
 263265 LITHIUM
 L3 265 L2 AND LITHIUM

=> s l3 and sinter?
 194041 SINTER?
 L4 17 L3 AND SINTER?

=> s l3 and (sinter? (p) carbon?)
 194041 SINTER?
 1494119 CARBON?
 14328 SINTER? (P) CARBON?
 L5 7 L3 AND (SINTER? (P) CARBON?)

=> d l5 ibib kwic

L5 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2002:272909 CAPLUS
 DOCUMENT NUMBER: 136:297395
 TITLE: Method for fabrication of cathode active material and
 a nonaqueous electrolyte battery
 INVENTOR(S): Hosoya, Mamoru; Fukushima, Yuzuru; Sakai, Hidecki;
 Kuyama, Junji
 PATENT ASSIGNEE(S): Sony Corporation, Japan
 SOURCE: Eur. Pat. Appl., 31 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1195827	A2	20020410	EP 2001-123894	20011005
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002117848	A2	20020419	JP 2000-308300	20001006
JP 2002117849	A2	20020419	JP 2000-308313	20001006
US 2002124386	A1	20020912	US 2001-966918	20010928
CN 1360353	A	20020724	CN 2001-138169	20010930
PRIORITY APPLN. INFO.:			JP 2000-308300	A 20001006
			JP 2000-308313	A 20001006

AB The invention comprises a method for producing a cathode active material having superior cell characteristics through single-phase synthesis of a composite material composed of a compd. represented by the general formula $\text{Li}_x\text{Fe}_1-y\text{MyPO}_4$ and a **carbon** material pos. and a method for producing a non-aq. electrolyte cell employing the so produced cathode active material. To this end, the cathode active material is prep'd. by a step of mixing the starting materials for synthesis of the compd. represented by the general formula $\text{Li}_x\text{Fe}_1-y\text{MyPO}_4$, a step of milling a mixt. obtained by the mixing step, a step of compressing the mixt. obtained by the mixing step to a preset d. and a step of **sintering** the mixt. obtained by the compressing step. A **carbon** material is added in any one of the above steps prior to the **sintering**

step. The d. of the mixt. in the compressing step is set to not less than 1.71 g/cm³ and not larger than 2.45 g/cm³.

IT 7440-44-0, Carbon, uses 198782-39-7, Iron lithium phosphate (FeLiO-1(PO₄)) 407606-22-8, Chromium iron lithium phosphate (CrO-0.8FeO.2-1LiO.05-1.2(PO₄)) 407606-24-0, Cobalt iron lithium phosphate (CoO-0.8FeO.2-1LiO.05-1.2(PO₄)) 407606-26-2, Copper iron lithium phosphate (CuO-0.8FeO.2-1LiO.05-1.2(PO₄)) 407606-28-4, Aluminum iron lithium phosphate (AlO-0.8FeO.2-1LiO.05-1.2(PO₄)) 407606-30-8, Gallium iron lithium phosphate (GaO-0.8FeO.2-1LiO.05-1.2(PO₄)) 407606-32-0, Boron iron lithium phosphate (BO-0.8FeO.2-1LiO.05-1.2(PO₄)) 407606-34-2, Iron lithium manganese phosphate (FeO.2-1LiO.05-1.2MnO-0.8(PO₄)) 407606-36-4, Iron lithium nickel phosphate (FeO.2-1LiO.05-1.2NiO-0.8(PO₄)) 407606-39-7, Iron lithium vanadium phosphate (FeO.2-1LiO.05-1.2VO-0.8(PO₄)) 407606-42-2, Iron lithium molybdenum phosphate (FeO.2-1LiO.05-1.2MoO-0.8(PO₄)) 407606-44-4, Iron lithium titanium phosphate (FeO.2-1LiO.05-1.2TiO-0.8(PO₄)) 407606-47-7, Iron lithium zinc phosphate (FeO.2-1LiO.05-1.2ZnO-0.8(PO₄)) 407606-49-9, Iron lithium magnesium phosphate (FeO.2-1LiO.05-1.2MgO-0.8(PO₄)) 407606-51-3, Iron lithium niobium phosphate (FeO.2-1LiO.05-1.2NbO-0.8(PO₄)) 407629-87-2 407629-90-7 407629-95-2 407630-01-7 407630-10-8 407630-14-2

RL: DEV (Device component use); USES (Uses)
(method for fabrication of cathode active material and nonaq. electrolyte battery)

IT 15365-14-7P, Iron lithium phosphate FeLiPO₄
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(method for fabrication of cathode active material and nonaq. electrolyte battery)

=> d 15 ibib kwic 2-7

L5 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:253129 CAPLUS

DOCUMENT NUMBER: 136:281939

TITLE: Nonaqueous electrolyte battery cathode active material capable of reversibly doping/undoping lithium

INVENTOR(S): Hosoya, Mamoru; Takahashi, Kimio; Fukushima, Yuzuru

PATENT ASSIGNEE(S): Sony Corporation, Japan

SOURCE: Eur. Pat. Appl., 16 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1193787	A2	20020403	EP 2001-123181	20010927
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002110161	A2	20020412	JP 2000-301399	20000929
US 2002114754	A1	20020822	US 2001-961895	20010924
CN 1350341	A	20020522	CN 2001-142556	20010929

PRIORITY APPLN. INFO.: JP 2000-301399 A 20000929

TI Nonaqueous electrolyte battery cathode active material capable of reversibly doping/undoping lithium

AB An LiFePO₄ carbon composite material is to be synthesized in a

single phase to realize superior cell characteristics. To this end, in the prepn. of a cathode active material, starting materials for synthesis of a compd. having the formula Li_xFePO_4 , where $0 < x \leq 1$, are mixed together, milled and sintered. A carbon material is added at one of these steps. As the starting materials for synthesis for Li_xFePO_4 , Li_3PO_4 , Fe_3PO_4 , $\text{Fe}_3(\text{PO}_4)_2$ or its hydrate $\text{Fe}_3(\text{PO}_4)_2 \cdot n\text{H}_2\text{O}$, where n is the no. of hydrates, are used, and the content of Fe^{3+} in the total iron in $\text{Fe}_3(\text{PO}_4)_2$ or its hydrate $\text{Fe}_3(\text{PO}_4)_2 \cdot n\text{H}_2\text{O}$ is set to 61 wt% or less.

- ST battery cathode **lithium** iron phosphate carbon composite
- IT Secondary batteries
(**lithium**; nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)
- IT Ball milling
Battery cathodes
Composites
Sintering
(nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)
- IT Carbonaceous materials (technological products)
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)
- IT Fluoropolymers, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)
- IT 10028-23-6, Phosphoric acid, iron(2+) salt (2:3) octahydrate 10045-86-0, Ferric phosphate 10377-52-3, **Lithium** phosphate Li_3PO_4 31096-55-6
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)
- IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 7439-93-2, **Lithium**, uses 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 15365-14-7, Iron **lithium** phosphate FeLiPO_4 21324-40-3, **Lithium** hexafluorophosphate
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)
- IT 24937-79-9, PvdF
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)
- IT 198782-39-7P, Iron **lithium** phosphate ($\text{FeLiO-1(PO}_4\text{)}$)
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)
- IT 872-36-6, Vinylene carbonate
RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)

L5 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:253128 CAPLUS

DOCUMENT NUMBER: 136:281938

TITLE: Nonaqueous electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**

INVENTOR(S): Hosoya, Mamoru; Takahashi, Kimio; Fukushima, Yuzuru

PATENT ASSIGNEE(S): Sony Corporation, Japan
 SOURCE: Eur. Pat. Appl., 15 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1193786	A2	20020403	EP 2001-123180	20010927
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002110163	A2	20020412	JP 2000-301401	20000929
US 2002061274	A1	20020523	US 2001-965273	20010927
CN 1349265	A	20020515	CN 2001-142532	20010929

PRIORITY APPLN. INFO.: JP 2000-301401 A 20000929

TI Nonaqueous electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**

AB A LiFePO_4 **carbon** composite material is to be synthesized in a single phase satisfactorily to achieve superior cell characteristics. In prepg. a cathode active material, starting materials for synthesis of a compd. represented by the general formula Li_xFePO_4 , where $0 < x \leq 1$, are mixed, milled and a **carbon** material is added to the resulting mass at an optional time point in the course of mixing, milling and **sintering**. Li_3PO_4 , $\text{Fe}_3(\text{PO}_4)_2$ or its hydrates $\text{Fe}_3(\text{PO}_4)_2 \cdot n\text{H}_2\text{O}$, where n denotes the no. of hydrates, are used as the starting materials for synthesis of Li_xFePO_4 . The temp. of a product from the **sintering** is set to 305.degree. or less when the product from the **sintering** is exposed to atm. The oxygen concn. in a **sintering** atm. is set to 1012 ppm in vol. or less at the time point of **sintering**.

ST battery cathode **lithium** iron phosphate carbon composite

IT Secondary batteries
 (lithium; nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)

IT Battery cathodes
 Composites
 Sintering
 (nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)

IT Carbon black, uses
 Carbonaceous materials (technological products)
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
 (nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)

IT Fluoropolymers, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)

IT Ball milling
 (planetary; nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)

IT 10028-23-6, Phosphoric acid, iron(2+) salt (2:3) octahydrate 10377-52-3, **Lithium** phosphate 14940-41-1, Iron phosphate $\text{Fe}_3(\text{PO}_4)_2$ 31096-55-6
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)

IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate 7439-93-2, **Lithium**, uses 7782-42-5, Graphite, uses 21324-40-3, **Lithium** hexafluorophosphate

RL: DEV (Device component use); USES (Uses)

(nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)

IT 872-36-6, Vinylene carbonate 7440-44-0, Carbon, uses 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 24937-79-9, Poly(vinylidene fluoride)

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)

IT 15365-14-7P, Iron **lithium** phosphate felipo4

198782-39-7P, Iron **lithium** phosphate (FeLiO-1(PO4))

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)

IT 7782-44-7, Oxygen, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(nonaq. electrolyte battery cathode active material capable of reversibly doping/undoping **lithium**)

L5 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:253127 CAPLUS

DOCUMENT NUMBER: 136:281937

TITLE: Nonaqueous electrolyte battery with cathode active material capable of reversibly doping/undoping **lithium**

INVENTOR(S): Hosoya, Mamoru; Takahashi, Kimio; Fukushima, Yuzuru

PATENT ASSIGNEE(S): Sony Corporation, Japan

SOURCE: Eur. Pat. Appl., 16 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1193785	A2	20020403	EP 2001-122769	20010921
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002110164	A2	20020412	JP 2000-301402	20000929
US 2002059719	A1	20020523	US 2001-956514	20010919
CN 1346159	A	20020424	CN 2001-138523	20010928

PRIORITY APPLN. INFO.: JP 2000-301402 A 20000929

TI Nonaqueous electrolyte battery with cathode active material capable of reversibly doping/undoping **lithium**

AB A LiFePO4 **carbon** composite material is to be synthesized in a single phase satisfactorily to prevent the deterioration of the performance of the cathode active material from occurring and achieve superior cell characteristics. In prep. a cathode active material, starting materials for synthesis of a compd. represented by the general formula Li_xFePO_4 , where $0 < x \leq 1$, are mixed, milled and a **carbon** material is added to the resulting mass at an optional time point in the course of mixing, milling and **sintering**. Li_3PO_4 , $\text{Fe}_3(\text{PO}_4)_2$ or its hydrates $\text{Fe}_3(\text{PO}_4)_2 \cdot n\text{H}_2\text{O}$, where n denotes the no. of hydrates, are used as the starting materials for synthesis of Li_xFePO_4 . The temp. of a product from the **sintering** is set to 305.degree. or less when the product from the **sintering** is exposed to atm.

ST battery cathode **lithium** iron phosphate carbon composite

IT Secondary batteries

(**lithium**; nonaq. electrolyte battery with cathode active material capable of reversibly doping/undoping **lithium**)

IT Battery cathodes

Composites

(nonaq. electrolyte battery with cathode active material capable of reversibly doping/undoping **lithium**)

IT Carbonaceous materials (technological products)

RL: DEV (Device component use); USES (Uses)

(nonaq. electrolyte battery with cathode active material capable of reversibly doping/undoping **lithium**)

IT Fluoropolymers, uses

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(nonaq. electrolyte battery with cathode active material capable of reversibly doping/undoping **lithium**)

IT Ball milling

(planetary; nonaq. electrolyte battery with cathode active material capable of reversibly doping/undoping **lithium**)

IT 10377-52-3, **Lithium** phosphate Li_3PO_4 14940-41-1, Iron

phosphate $\text{Fe}_3(\text{PO}_4)_2$ 31096-55-6

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)

(nonaq. electrolyte battery with cathode active material capable of reversibly doping/undoping **lithium**)

IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 616-38-6,

Dimethyl carbonate 872-36-6, Vinylene carbonate 7439-93-2,

Lithium, uses 7782-42-5, Graphite, uses 9011-17-0,

Hexafluoropropylene-vinylidene fluoride copolymer 21324-40-3,

Lithium hexafluorophosphate

RL: DEV (Device component use); USES (Uses)

(nonaq. electrolyte battery with cathode active material capable of reversibly doping/undoping **lithium**)

IT 7440-44-0, Carbon, uses 24937-79-9, PvdF

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(nonaq. electrolyte battery with cathode active material capable of reversibly doping/undoping **lithium**)

IT 15365-14-7P, Iron **lithium** phosphate FeLiPO_4

198782-39-7P, Iron **lithium** phosphate ($\text{FeLi}_{0-1}(\text{PO}_4)$)

RL: DEV (Device component use); SPN (Synthetic preparation); PREP

(Preparation); USES (Uses)

(nonaq. electrolyte battery with cathode active material capable of reversibly doping/undoping **lithium**)

L5 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:253126 CAPLUS

DOCUMENT NUMBER: 136:265826

TITLE: Method for the preparation of cathode active material for a nonaqueous electrolyte battery

INVENTOR(S): Hosoya, Mamoru; Takahashi, Kimio; Fukushima, Yuzuru

PATENT ASSIGNEE(S): Sony Corporation, Japan

SOURCE: Eur. Pat. Appl., 16 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1193784	A2	20020403	EP 2001-122752	20010921
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002110165	A2	20020412	JP 2000-301403	20000929
US 2002041998	A1	20020411	US 2001-961863	20010924
CN 1349264	A	20020515	CN 2001-142531	20010929
PRIORITY APPLN. INFO.:			JP 2000-301403	A 20000929

AB A **LiFePO₄ carbon** composite material is to be synthesized in a single phase satisfactorily to achieve superior cell characteristics. In prep. a cathode active material, a starting material for synthesis of a compd. represented by the general formula Li_xFePO_4 , where $0 < x \leq 1$, is mixed, milled and **sintered** and a **carbon** material is added to the resulting mass at an optional time point in the course of mixing, milling and **sintering**. Li_3PO_4 , $\text{Fe}_3(\text{PO}_4)_2$ or its hydrates $\text{Fe}_3(\text{PO}_4)_2 \cdot n\text{H}_2\text{O}$, where n denotes the no. of hydrates, are used as the starting material for synthesis of Li_xFePO_4 . The particle size distribution of particles of the starting material for synthesis following the milling with the particle size not less than $3 \mu\text{m}$ is set to 2.2% or less in terms of the volumetric integration frequency.

ST battery cathode **lithium** iron phosphate carbon composite

IT Secondary batteries

(**lithium**; method for prep. of cathode active material for nonaq. electrolyte battery)

IT 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 21324-40-3, **Lithium** hexafluorophosphate

RL: DEV (Device component use); USES (Uses)

(method for prep. of cathode active material for nonaq. electrolyte battery)

IT 15365-14-7P, Iron **lithium** phosphate FeLiPO_4

198782-39-7P, Iron **lithium** phosphate ($\text{FeLi}_{0-1}(\text{PO}_4)$)

RL: DEV (Device component use); SPN (Synthetic preparation); PREP

(Preparation); USES (Uses)

(method for prep. of cathode active material for nonaq. electrolyte battery)

L5 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:138998 CAPLUS

DOCUMENT NUMBER: 136:186643

TITLE: Nonaqueous electrolyte secondary battery

INVENTOR(S): Atsumi, Yoshinori; Yamamoto, Masahiro; Ohta, Yasuo

PATENT ASSIGNEE(S): Sony Corporation, Japan

SOURCE: Eur. Pat. Appl., 11 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1180811	A2	20020220	EP 2001-119842	20010816

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

JP 2002134112	A2	20020510	JP 2001-228239	20010727
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PRIORITY APPLN. INFO.: JP 2000-248672 A 20000818

JP 2001-228239 A 20010727

AB A nonaq. electrolyte secondary cell including: a cathode contg. a compd. expressed by a general formula AxMyPO_4 (wherein A represents an alkali metal and M represents a transition element, which are contained in ranges: $0 < x \leq 2$ and $1 \leq y \leq 2$); an anode contg. **sintered carbon** material prep. by **sintering** a **carbon** material capable of doping/dedoping **lithium**; and a nonaq. electrolyte soln. This nonaq. electrolyte secondary cell can exhibit a high temp. storage characteristic and a high capacity.

ST **lithium** battery nonaq electrolyte secondary

IT Secondary batteries

(**lithium**; nonaq. electrolyte secondary battery)

IT 554-13-2, **Lithium** carbonate 7783-28-0, Diammonium hydrogen phosphate 14567-67-0, Vivianite

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)

(nonaq. electrolyte secondary battery)

IT 108-32-7, Propylene carbonate 623-53-0, Ethyl methyl carbonate 7429-90-5, Aluminum, uses 7440-44-0, Carbon, uses 21324-40-3, **Lithium** hexafluorophosphate

RL: DEV (Device component use); USES (Uses)

(nonaq. electrolyte secondary battery)

IT 15365-14-7P, Iron **lithium** phosphate FeLiPO_4 22831-39-6P, Magnesium silicide (Mg_2Si)

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(nonaq. electrolyte secondary battery)

L5 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:796403 CAPLUS

DOCUMENT NUMBER: 135:346864

TITLE: Cathode for nonaqueous electrolyte **lithium** ion battery

INVENTOR(S): Yamada, Atsuo; Yamahira, Takayuki

PATENT ASSIGNEE(S): Sony Corporation, Japan

SOURCE: Eur. Pat. Appl., 26 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1150368	A2	20011031	EP 2001-109919	20010424
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001307730	A2	20011102	JP 2000-128998	20000425
CA 2344981	AA	20011025	CA 2001-2344981	20010425
CN 1320976	A	20011107	CN 2001-117211	20010425
US 2002004169	A1	20020110	US 2001-842485	20010425

PRIORITY APPLN. INFO.: JP 2000-128998 A 20000425

TI Cathode for nonaqueous electrolyte **lithium** ion battery

AB The **lithium** ion cell is improved appreciably in operational stability under special conditions, such as high temps., and exhibits superior characteristics against over-discharging, while guaranteeing compatibility to the operating voltage of a conventional **lithium** ion cell and an energy d. equiv. to that of the conventional **lithium** ion cell. To this end, the **lithium** ion cell includes a pos. electrode, a neg. electrode and a nonaq. electrolyte, and uses, as a pos. electrode active material, a composite material of a first **lithium** compd. represented by the general formula Li_xMyPO_4 , where $0 < x < 2$, $0.8 < y < 1.2$ and M contains Fe, and a second **lithium** compd. having a potential holder than the potential of the first **lithium** compd.

ST **lithium** nonaq electrolyte cathode

IT Charcoal

RL: DEV (Device component use); USES (Uses)

(activated; cathode for nonaq. electrolyte **lithium** ion battery)

IT Battery cathodes

(cathode for nonaq. electrolyte **lithium** ion battery)

IT Carbon fibers, uses

Carbonaceous materials (technological products)

Coke

Petroleum coke

RL: DEV (Device component use); USES (Uses)

(cathode for nonaq. electrolyte **lithium** ion battery)

IT Carbon black, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (cathode for nonaq. electrolyte **lithium** ion battery)

IT Fluoropolymers, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (cathode for nonaq. electrolyte **lithium** ion battery)

IT Organic compounds, uses
 RL: DEV (Device component use); USES (Uses)
 (high mol., sintered; cathode for nonaq. electrolyte **lithium** ion battery)

IT Secondary batteries
 (**lithium**; cathode for nonaq. electrolyte **lithium** ion battery)

IT Coke
 RL: DEV (Device component use); USES (Uses)
 (needle; cathode for nonaq. electrolyte **lithium** ion battery)

IT Coke
 RL: DEV (Device component use); USES (Uses)
 (pitch; cathode for nonaq. electrolyte **lithium** ion battery)

IT Furan resins
 Phenolic resins, uses
 RL: DEV (Device component use); USES (Uses)
 (**sintered** and **carbonized**; cathode for nonaq. electrolyte **lithium** ion battery)

IT 50-21-5D, Lactic acid, ester 60-29-7, Diethyl ether, uses 64-19-7D, Acetic acid, ester, uses 75-05-8, Acetonitrile, uses 79-09-4D, Propionic acid, ester 96-47-9, 2-Methyltetrahydrofuran 96-48-0 96-49-1, Ethylene carbonate 100-66-3, Anisole, uses 105-58-8, Diethyl carbonate 107-12-0, Propionitrile 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 126-33-0, Sulfolane 409-21-2, Silicon carbide sic, uses 554-12-1, Methyl propionate 616-38-6, Dimethyl carbonate 623-42-7, Methyl butyrate 623-96-1, Dipropyl carbonate 629-14-1, 1,2-Diethoxyethane 646-06-0, 1,3-Dioxolane 872-36-6, Vinylene carbonate 1072-47-5, 4-Methyl-1,3-dioxolane 1313-08-2 2550-62-1, **Lithium** methanesulfonate 4437-85-8, Butylene carbonate 7439-93-2, **Lithium**, uses 7440-50-8, Copper, uses 7447-41-8, **Lithium** chloride, uses 7550-35-8, **Lithium** bromide 7782-42-5, Graphite, uses 7791-03-9, **Lithium** perchlorate 9003-07-0, Polypropylene 12007-81-7, Silicon tetraboride 12008-29-6, Silicon hexaboride 12013-56-8, Calcium disilicide 12017-12-8, Cobalt disilicide 12018-09-6, Chromium disilicide 12022-99-0, Iron disilicide 12032-86-9, Manganese disilicide 12033-76-0, Silicon nitride oxide Si₂N₂O 12033-89-5, Silicon nitride, uses 12034-80-9, Niobium disilicide 12039-79-1, Tantalum disilicide 12039-83-7, Titanium silicide TiSi₂ 12039-87-1, Vanadium disilicide 12039-88-2, Tungsten disilicide 12059-14-2, Nickel silicide (Ni₂Si) 12136-78-6, Molybdenum disilicide 12159-07-8, Copper silicide Cu₅Si 12190-79-3, Cobalt **lithium** oxide CoO₂ 12201-89-7, Nickel disilicide 14283-07-9, **Lithium** tetrafluoroborate 14485-20-2, **Lithium** tetraphenylborate 15365-14-7, Iron **lithium** phosphate FeLiPO₄ 19414-36-9, Iron **lithium** manganese phosphate ((Fe,Mn)Li(PO₄)) 21324-40-3, **Lithium** hexafluorophosphate 22831-39-6, Magnesium silicide (Mg₂Si) 29935-35-1, **Lithium** hexafluoroarsenate 33454-82-9, **Lithium** trifluoromethanesulfonate 35678-71-8, Methylsulfolane 90076-65-6 113066-89-0, Cobalt **lithium** nickel oxide Co_{0.2}LiNi_{0.8}O₂ 113671-38-8, Silicon oxide SiO₂ 160479-36-7, **Lithium** tin oxide 178958-56-0, **Lithium** silicon oxide 300858-61-1 339333-78-7, Zinc silicide ZnSi₂ 371148-86-6, Tin oxide (SnO₂) 371148-87-7, **Lithium** magnesium manganese oxide (LiMg_{0.2}Mn_{0.8}O₂)
 RL: DEV (Device component use); USES (Uses)
 (cathode for nonaq. electrolyte **lithium** ion battery)

IT 24937-79-9, PvdF

RL: TEM (Technical or engineered material use); USES (Uses)
(cathode for nonaq. electrolyte lithium ion battery)
IT 7440-44-0, Carbon, uses
RL: DEV (Device component use); USES (Uses)
(pyrocarbon; cathode for nonaq. electrolyte lithium ion
battery)

=> file reg

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	29.68	47.57

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-4.56	-4.56

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DICTIONARY FILE UPDATES: 10 JUL 2003 HIGHEST RN 546060-09-7

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

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Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP
PROPERTIES for more information. See STNNote 27, Searching Properties
in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> s (0.01-2)/Li and (1-2)/Co and 1/P and 4/O

90633 (0.01-2)/LI
301002 (1-2)/CO
833525 1/P
3109357 4/O

L6 164 (0.01-2)/LI AND (1-2)/CO AND 1/P AND 4/O

=> s (0.01-2)/Li and (1-2)/Ni and 1/P and 4/O

90633 (0.01-2)/LI
421788 (1-2)/NI
833525 1/P
3109357 4/O

L7 119 (0.01-2)/LI AND (1-2)/NI AND 1/P AND 4/O

=> s (0.01-2)/Li and (1-2)/Mn and 1/P and 4/O

90633 (0.01-2)/LI
400582 (1-2)/MN
833525 1/P
3109357 4/O

L8 160 (0.01-2)/LI AND (1-2)/MN AND 1/P AND 4/O

=> s (0.01-2)/Li and (1-2)/Cu and 1/P and 4/O

90633 (0.01-2)/LI
392583 (1-2)/CU

833525 1/P
3109357 4/O
L9 47 (0.01-2)/LI AND (1-2)/CU AND 1/P AND 4/O

=> s (0.01-2)/Li and (1-2)/Zn and 1/P and 4/O
90633 (0.01-2)/LI
155387 (1-2)/ZN
833525 1/P
3109357 4/O

L10 73 (0.01-2)/LI AND (1-2)/ZN AND 1/P AND 4/O

=> s (0.01-2)/Li and (1-2)/Cd and 1/P and 4/O
90633 (0.01-2)/LI
36054 (1-2)/CD
833525 1/P
3109357 4/O

L11 11 (0.01-2)/LI AND (1-2)/CD AND 1/P AND 4/O

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	102.08	149.65

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-4.56

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FILE COVERS 1907 - 11 Jul 2003 VOL 139 ISS 3
FILE LAST UPDATED: 10 Jul 2003 (20030710/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l6-l11
92 L6
82 L7
198 L8
29 L9
54 L10
11 L11
L12 346 (L6 OR L7 OR L8 OR L9 OR L10 OR L11)

=> s l12 and (sinter? (p) carbon?)
194041 SINTER?
1494119 CARBON?
14328 SINTER? (P) CARBON?
L13 2 L12 AND (SINTER? (P) CARBON?)

=> d l13 1-2 ibib kwic

L13 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:272909 CAPLUS

DOCUMENT NUMBER: 136:297395

TITLE: Method for fabrication of cathode active material and a nonaqueous electrolyte battery

INVENTOR(S): Hosoya, Mamoru; Fukushima, Yuzuru; Sakai, Hidecki; Kuyama, Junji

PATENT ASSIGNEE(S): Sony Corporation, Japan

SOURCE: Eur. Pat. Appl., 31 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1195827	A2	20020410	EP 2001-123894	20011005
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002117848	A2	20020419	JP 2000-308300	20001006
JP 2002117849	A2	20020419	JP 2000-308313	20001006
US 2002124386	A1	20020912	US 2001-966918	20010928
CN 1360353	A	20020724	CN 2001-138169	20010930
PRIORITY APPLN. INFO.:			JP 2000-308300	A 20001006
			JP 2000-308313	A 20001006

AB The invention comprises a method for producing a cathode active material having superior cell characteristics through single-phase synthesis of a composite material composed of a compd. represented by the general formula $\text{Li}_x\text{Fe}_{1-y}\text{MyPO}_4$ and a carbon material pos. and a method for producing a non-aq. electrolyte cell employing the so produced cathode active material. To this end, the cathode active material is prepd. by a step of mixing the starting materials for synthesis of the compd. represented by the general formula $\text{Li}_x\text{Fe}_{1-y}\text{MyPO}_4$, a step of milling a mixt. obtained by the mixing step, a step of compressing the mixt. obtained by the mixing step to a preset d. and a step of sintering the mixt. obtained by the compressing step. A carbon material is added in any one of the above steps prior to the sintering step. The d. of the mixt. in the compressing step is set to not less than 1.71 g/cm³ and not larger than 2.45 g/cm³.

IT 7440-44-0, Carbon, uses 198782-39-7, Iron lithium phosphate ($\text{FeLiO}-1(\text{PO}_4)$) 407606-22-8, Chromium iron lithium phosphate ($\text{CrO}-0.8\text{FeO}.2-1\text{LiO}.05-1.2(\text{PO}_4)$) 407606-24-0, Cobalt iron lithium phosphate ($\text{CoO}-0.8\text{FeO}.2-1\text{LiO}.05-1.2(\text{PO}_4)$) 407606-26-2, Copper iron lithium phosphate ($\text{CuO}-0.8\text{FeO}.2-1\text{LiO}.05-1.2(\text{PO}_4)$) 407606-28-4, Aluminum iron lithium phosphate ($\text{AlO}-0.8\text{FeO}.2-1\text{LiO}.05-1.2(\text{PO}_4)$) 407606-30-8, Gallium iron lithium phosphate ($\text{GaO}-0.8\text{FeO}.2-1\text{LiO}.05-1.2(\text{PO}_4)$) 407606-32-0, Boron iron lithium phosphate ($\text{BO}-0.8\text{FeO}.2-1\text{LiO}.05-1.2(\text{PO}_4)$) 407606-34-2, Iron lithium manganese phosphate ($\text{FeO}.2-1\text{LiO}.05-1.2\text{MnO}-0.8(\text{PO}_4)$) 407606-36-4, Iron lithium nickel phosphate ($\text{FeO}.2-1\text{LiO}.05-1.2\text{NiO}-0.8(\text{PO}_4)$) 407606-39-7, Iron lithium vanadium phosphate ($\text{FeO}.2-1\text{LiO}.05-1.2\text{VO}-0.8(\text{PO}_4)$) 407606-42-2, Iron lithium molybdenum phosphate ($\text{FeO}.2-1\text{LiO}.05-1.2\text{MoO}-0.8(\text{PO}_4)$) 407606-44-4, Iron lithium titanium phosphate ($\text{FeO}.2-1\text{LiO}.05-1.2\text{TiO}-0.8(\text{PO}_4)$) 407606-47-7, Iron lithium zinc phosphate ($\text{FeO}.2-1\text{LiO}.05-1.2\text{ZnO}-0.8(\text{PO}_4)$) 407606-49-9, Iron lithium magnesium phosphate ($\text{FeO}.2-1\text{LiO}.05-1.2\text{MgO}-0.8(\text{PO}_4)$) 407606-51-3, Iron lithium niobium phosphate ($\text{FeO}.2-1\text{LiO}.05-1.2\text{NbO}-0.8(\text{PO}_4)$) 407629-87-2 407629-90-7 407629-95-2 407630-01-7 407630-10-8 407630-14-2
RL: DEV (Device component use); USES (Uses)

(method for fabrication of cathode active material and nonaq.
electrolyte battery)

L13 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:796403 CAPLUS

DOCUMENT NUMBER: 135:346864

TITLE: Cathode for nonaqueous electrolyte lithium ion battery

INVENTOR(S): Yamada, Atsuo; Yamahira, Takayuki

PATENT ASSIGNEE(S): Sony Corporation, Japan

SOURCE: Eur. Pat. Appl., 26 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1150368	A2	20011031	EP 2001-109919	20010424
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001307730	A2	20011102	JP 2000-128998	20000425
CA 2344981	AA	20011025	CA 2001-2344981	20010425
CN 1320976	A	20011107	CN 2001-117211	20010425
US 2002004169	A1	20020110	US 2001-842485	20010425

PRIORITY APPLN. INFO.:

JP 2000-128998 A 20000425

IT Furan resins

Phenolic resins, uses

RL: DEV (Device component use); USES (Uses)

(sintered and carbonized; cathode for nonaq.
electrolyte lithium ion battery)

IT 50-21-5D, Lactic acid, ester 60-29-7, Diethyl ether, uses 64-19-7D,
Acetic acid, ester, uses 75-05-8, Acetonitrile, uses 79-09-4D,
Propionic acid, ester 96-47-9, 2-Methyltetrahydrofuran 96-48-0
96-49-1, Ethylene carbonate 100-66-3, Anisole, uses 105-58-8, Diethyl
carbonate 107-12-0, Propionitrile 108-32-7, Propylene carbonate
109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 126-33-0, Sulfolane
409-21-2, Silicon carbide sic, uses 554-12-1, Methyl propionate
616-38-6, Dimethyl carbonate 623-42-7, Methyl butyrate 623-96-1,
Dipropyl carbonate 629-14-1, 1,2-Diethoxyethane 646-06-0,
1,3-Dioxolane 872-36-6, Vinylene carbonate 1072-47-5,
4-Methyl-1,3-dioxolane 1313-08-2 2550-62-1, Lithium methanesulfonate
4437-85-8, Butylene carbonate 7439-93-2, Lithium, uses 7440-50-8,
Copper, uses 7447-41-8, Lithium chloride, uses 7550-35-8, Lithium
bromide 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate
9003-07-0, Polypropylene 12007-81-7, Silicon tetraboride 12008-29-6,
Silicon hexaboride 12013-56-8, Calcium disilicide 12017-12-8, Cobalt
disilicide 12018-09-6, Chromium disilicide 12022-99-0, Iron disilicide
12032-86-9, Manganese disilicide 12033-76-0, Silicon nitride oxide
Si2N2O 12033-89-5, Silicon nitride, uses 12034-80-9, Niobium
disilicide 12039-79-1, Tantalum disilicide 12039-83-7, Titanium
silicide TiSi2 12039-87-1, Vanadium disilicide 12039-88-2, Tungsten
disilicide 12059-14-2, Nickel silicide (Ni2Si) 12136-78-6, Molybdenum
disilicide 12159-07-8, Copper silicide Cu5Si 12190-79-3, Cobalt
lithium oxide CoLiO2 12201-89-7, Nickel disilicide 14283-07-9, Lithium
tetrafluoroborate 14485-20-2, Lithium tetraphenylborate 15365-14-7,
Iron lithium phosphate FeLiPO4 19414-36-9, Iron lithium
manganese phosphate ((Fe,Mn)Li(PO4)) 21324-40-3, Lithium
hexafluorophosphate 22831-39-6, Magnesium silicide (Mg2Si) 29935-35-1,
Lithium hexafluoroarsenate 33454-82-9, Lithium trifluoromethanesulfonate
35678-71-8, Methylsulfolane 90076-65-6 113066-89-0, Cobalt lithium
nickel oxide Co0.2LiNi0.8O2 113671-38-8, Silicon oxide SiO2
160479-36-7, Lithium tin oxide 178958-56-0, Lithium silicon oxide
300858-61-1 339333-78-7, Zinc silicide ZnSi2 371148-86-6, Tin

oxide (SnO0-2) 371148-87-7, Lithium magnesium manganese oxide
(LiMg0.2Mn0.8O2)

RL: DEV (Device component use); USES (Uses)
(cathode for nonaq. electrolyte lithium ion battery)

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First Name = MASAHIRO

Application#	Patent#	Status	Date Filed	Title	Inventor Name
<u>10392576</u>	Not Issued	019	03/20/2003	LIGHTING METHOD AND APPARATUS FOR HIGH-PRESSURE DISCHARGE LAMP, AND HIGH-PRESSURE DISCHARGE LAMP APPARATUS	YAMAMOTO, MASAHIRO
<u>10371972</u>	Not Issued	030	02/21/2003	METHOD FOR PRODUCING KOJI FEED COMPOSITION USING OILS	YAMAMOTO, MASAHIRO
<u>10278207</u>	Not Issued	030	10/21/2002	METHOD FOR OPERATING HIGH-PRESSURE DISCHARGE LAMP, LIGHTING APPARATUS, AND HIGH-PRESSURE DISCHARGE LAMP APPARATUS	YAMAMOTO, MASAHIRO
<u>10135784</u>	Not Issued	041	04/30/2002	METHOD FOR TREATING ORGANIC WASTE	YAMAMOTO, MASAHIRO
<u>10084454</u>	Not Issued	095	02/28/2002	INTEGRATED CIRCUIT	YAMAMOTO, MASAHIRO
<u>10019851</u>	Not Issued	041	11/07/2001	WIRELESS DATA COLLECTION SYSTEM	YAMAMOTO, MASAHIRO
<u>09956167</u>	Not Issued	030	09/19/2001	VIDEO GAME SYSTEM, CHARACTER ACTION CONTROL METHOD, AND READABLE STORAGE MEDIUM STORING CHARACTER ACTION CONTROL PROGRAM	YAMAMOTO, MASAHIRO

<u>09932050</u>	Not Issued	030	08/17/2001	NON-AQUEOUS ELECTROLYTE SECONDARY CELL	YAMAMOTO, MASAHIRO
<u>09931106</u>	<u>6411161</u>	150	08/17/2001	AC COUPLING CIRCUIT	YAMAMOTO, MASAHIRO
<u>09906909</u>	Not Issued	094	07/17/2001	LIVESTOCK FEED COMPOSITION AND ITS PRODUCTION METHOD	YAMAMOTO, MASAHIRO
<u>09866794</u>	<u>6404792</u>	150	05/30/2001	SEMICONDUCTOR LIGHT-EMITTING DEVICE	YAMAMOTO, MASAHIRO
<u>09726199</u>	Not Issued	041	11/29/2000	OPTICAL MICROPHONE	YAMAMOTO, MASAHIRO
<u>09720920</u>	Not Issued	168	12/04/2000	UNDERCOATING AGENT FOR FORMING PHOTOEXITING COATING FILM OR PHOTOCATALYTIC AND HYDROPHILIC COATING FILM	YAMAMOTO, MASAHIRO
<u>09720727</u>	Not Issued	094	03/06/2001	ANIMAL FEED AND PRODUCTION METHOD THEREOF	YAMAMOTO, MASAHIRO
<u>09648372</u>	Not Issued	030	08/25/2000	PATTERN INSPECTION APPARATUS, PATTERN INSPECTION METHOD, AND RECORDING MEDIUM	YAMAMOTO, MASAHIRO
<u>09642646</u>	<u>6359919</u>	150	08/22/2000	GALLIUM NITRIDE-BASED COMPOUND SEMICONDUCTOR LASER AND METHOD OF MANUFACTURING THE SAME	YAMAMOTO, MASAHIRO
<u>09601871</u>	Not Issued	161	08/09/2000	ELECTROSTATIC POWDER SPRAY GUN AND ELECTROSTATIC POWDER COATING METHOD	YAMAMOTO, MASAHIRO
<u>09568258</u>	<u>6257918</u>	150	05/10/2000	WIRE HARNESS CONNECTOR HAVING A CONTACT RETENTION PLATE	YAMAMOTO, MASAHIRO
<u>09553497</u>	<u>6364705</u>	150	04/20/2000	CONNECTOR INCLUDING A RELEASABLE CONTACT ENGAGING LATCH	YAMAMOTO, MASAHIRO
<u>09543350</u>	Not Issued	161	04/05/2000	SEMICONDUCTOR INTEGRATED DEVICE FOR ZENER ZAPPING WITH LOW LEAKAGE CURRENT	YAMAMOTO, MASAHIRO

09471512	6231726	150	12/23/1999	PLASMA PROCESSING APPARATUS	YAMAMOTO, MASAHIRO
09471509	6176980	150	12/23/1999	SPUTTERING METHOD AND APPARATUS	YAMAMOTO, MASAHIRO
09471125	6219608	150	12/23/1999	ELECTRONIC TRANSMISSION CONTROL SYSTEM FOR AUTOMOTIVE VEHICLE WITH CONTINUOUSLY VARIABLE AUTOMATIC TRANSMISSION	YAMAMOTO, MASAHIRO
09462350	Not Issued	071	01/07/2000	DEVICE AND METHOD FOR POSITIONING ELECTRIC DISCHARGE MACHINE	YAMAMOTO, MASAHIRO
09452966	Not Issued	161	12/02/1999	METHOD FOR PRETREATING SURFACE BEFORE FORMATION OF PHOTOCATALYTICALLY HYDROPHILIFIABLE COATING AND CLEANING AGENT AND UNDERCOATING COMPOSITION FOR THE METHOD DEVICE THEREFOR	YAMAMOTO, MASAHIRO
09409189	6207106	150	09/30/1999	ROOM TEMPERATURE DEODORIZING METHOD BASE ON A POLYMERIZATION REACTION, AN OXIDATION REACTION AND ADSORPTION	YAMAMOTO, MASAHIRO
09385841	Not Issued	089	08/30/1999	PURCHASE REQUEST SYSTEM	YAMAMOTO, MASAHIRO
09180543	6129655	150	01/21/1999	METHOD OF FOLDING AND SHAPING SHEET, AND APPARATUS FOR FOLDING AND SHAPING SHEET	YAMAMOTO, MASAHIRO
09171495	6254523	150	03/10/1999	METHOD OF IMPARTING DIRECTIONAL PERMANENCY OF FOLDING TO SHEET, AND APPARATUS THEREFOR	YAMAMOTO, MASAHIRO
08914092	5788276	150	08/19/1997	UTILITY VEHICLE	YAMAMOTO, MASAHIRO
08900127	5966396	150	07/25/1997	GALLIUM NITRIDE-BASED COMPOUND SEMICONDUCTOR LASER AND	YAMAMOTO, MASAHIRO

					METHOD OF MANUFACTURING THE SAME	
<u>08900121</u>	<u>5987048</u>	150	07/25/1997		GALLIUM NITRIDE-BASED COMPOUND SEMICONDUCTOR LASER AND METHOD OF MANUFACTURING THE SAME	YAMAMOTO, MASAHIRO
<u>08646636</u>	<u>5752328</u>	150	05/08/1996		TREATMENT METHOD FOR WOODS AND APPARATUS THEREOF	YAMAMOTO, MASAHIRO
<u>08645720</u>	<u>5914635</u>	150	05/14/1996		SEMICONDUCTOR AMPLIFIER CIRCUIT WHICH ELIMINATES AN UNSATURATED STATE CAUSED BY A PULL-UP RESISTOR	YAMAMOTO, MASAHIRO
<u>08643960</u>	<u>5756955</u>	150	05/07/1996		METHOD AND APPARATUS FOR ELECTRIC DISCHARGE MACHINING WITH CALCULATION OF MACHINING AREA	YAMAMOTO, MASAHIRO
<u>07831113</u>	<u>5248288</u>	150	02/04/1992		APPARATUS FOR CHANGING WORK HOLDER IN TRANSFER PRESS	YAMAMOTO, MASAHIRO
<u>07235014</u>	<u>4980781</u>	250	08/22/1988		METHOD OF AND APPARATUS FOR SETTING ORIGINAL IN IMAGE	YAMAMOTO, MASAHIRO
<u>06873891</u>	<u>4735776</u>	150	06/13/1986		CHEMICAL MANIPULATOR	YAMAMOTO, MASAHIRO
<u>06869783</u>	<u>4692191</u>	150	06/02/1986		METHOD OF IMPROVING FUNCTIONS OF SURFACE OF ALLOY STEEL BY MEANS OF IRRADIATION OF LASER BEAM, AND ALLOY STEEL AND STRUCTURE MADE BY THE METHOD	YAMAMOTO, MASAHIRO
<u>06862040</u>	<u>4670290</u>	150	05/12/1986		MULTIPLE TORCH TYPE PLASMA SPRAY COATING METHOD AND APPARATUS THEREFOR	YAMAMOTO, MASAHIRO
<u>06862036</u>	<u>4811689</u>	150	05/12/1986		ELECTROSTATIC POWDER COATING APPARATUS	YAMAMOTO, MASAHIRO
<u>06862031</u>	<u>4741286</u>	150	05/12/1986		SINGLE TORCH-TYPE PLASMA SPRAY COATING METHOD AND APPARATUS	YAMAMOTO, MASAHIRO

<u>06855167</u>	Not Issued	166	04/23/1986	THEREFOR	YAMAMOTO, MASAHIRO
<u>06829767</u>	<u>4746145</u>	150	02/14/1986	APPARATUS FOR FORMING, CORRECTING PATTERN	YAMAMOTO, MASAHIRO
<u>06739260</u>	<u>4862095</u>	150	05/30/1985	CHASSIS FRAME FOR RIDER- CONTROLLED WORKING VEHICLE	YAMAMOTO, MASAHIRO
<u>06584440</u>	<u>4695696</u>	150	01/30/1984	WIRE ELECTRODE BREAKAGE DETECTION METHOD AND APPARATUS	YAMAMOTO, MASAHIRO
<u>06556006</u>	Not Issued	161	11/29/1983	ELECTRIC DISCHARGE MACHINE WITH CONTROL OF THE MACHINING PULSE,S CURRENT VALUE IN ACCORDANCE WITH THE DELAY TIME	YAMAMOTO, MASAHIRO
<u>06553179</u>	Not Issued	161	11/18/1983	DNA ANALYSER	YAMAMOTO, MASAHIRO
<u>06506337</u>	Not Issued	161	06/21/1983	CHEMICAL MANIPULATOR	YAMAMOTO, MASAHIRO
<u>06391735</u>	<u>4523805</u>	150	06/24/1982	CHEMICAL MANIPULATOR	YAMAMOTO, MASAHIRO
<u>06347101</u>	<u>4413498</u>	150	02/09/1982	LIGHT BEAM TRANSFER DEVICE	YAMAMOTO, MASAHIRO
				ROTARY TRANSFER PRESS	YAMAMOTO, MASAHIRO

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Last Name = YAMAMOTO
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Application#	Patent#	Status	Date Filed	Title	Inventor Name
<u>09257213</u>	Not Issued	161	02/25/1999	PROCESS FOR PRODUCING A WIRE SAW, APPARATUS FOR PRODUCING A WIRE SAW AND WIRE SAW PRODUCED IN ACCORDANCE WITH THE PROCESS	YAMAMOTO, MASAHIRO
<u>09211154</u>	Not Issued	041	12/14/1998	MOBILE TELEPHONE PROVIDED WITH CALL TRANSFER FUNCTION AND CALL TRANSFER METHOD	YAMAMOTO, MASAHIRO
<u>09196137</u>	<u>6204659</u>	150	11/20/1998	INDUCTANCE CHANGE DETECTION CIRCUIT	YAMAMOTO, MASAHIRO
<u>08953421</u>	Not Issued	161	10/17/1997	METHOD AND APPARATUS FOR ELECTROSTATIC POWDER COATING	YAMAMOTO, MASAHIRO
<u>08951467</u>	<u>5915621</u>	150	10/16/1997	ELECTROSTATIC POWDER COATING METHOD AND APPARATUS	YAMAMOTO, MASAHIRO
<u>08932909</u>	<u>5978139</u>	150	09/17/1997	DIFFRACTION GRATING LENS AND OPTICAL DISK RECORDING/REPRODUCING APPARATUS USING THE SAME	YAMAMOTO, MASAHIRO
<u>08930056</u>	<u>5958808</u>	150	03/18/1998	LOW-PERMITTIVITY GLASS FIBERS	YAMAMOTO, MASAHIRO
<u>08737648</u>	<u>6010666</u>	150	11/15/1996	DEODORIZING METHOD, DEODORIZER, METHOD OF MANUFACTURING DEODORIZER, AND DEODORIZING	YAMAMOTO, MASAHIRO

				APPARATUS	
<u>08737270</u>	<u>5929343</u>	150	11/06/1996	DEVICE FOR MEASURING POWDER FLOW RATE AND APPARATUS AND METHOD FOR SUPPLYING POWDER	YAMAMOTO, MASAHIRO
<u>08704748</u>	<u>5773497</u>	150	09/16/1996	CROSSLINKING RESIN COMPOSITION	YAMAMOTO, MASAHIRO
<u>08695879</u>	<u>5708207</u>	250	08/12/1996	SEMICONDUCTOR ACCELERATION SENSOR	YAMAMOTO, MASAHIRO
<u>08689689</u>	<u>5780873</u>	150	08/13/1996	SEMICONDUCTOR DEVICE CAPABLE OF EASILY FORMING CAVITY AND ITS MANUFACTURING METHOD	YAMAMOTO, MASAHIRO
<u>08662163</u>	Not Issued	161	06/12/1996	LITHIUM SECONDARY BATTERY	YAMAMOTO, MASAHIRO
<u>08512632</u>	<u>5589634</u>	150	08/08/1995	SEMICONDUCTOR ACCELERATION SENSOR FOR DETECTING ACCELERATION IN ORTHOGONAL DIRECTIONS	YAMAMOTO, MASAHIRO
<u>08507161</u>	<u>5612488</u>	150	07/26/1995	SEMICONDUCTOR ACCELERATION DETECTING DEVICE	YAMAMOTO, MASAHIRO
<u>08455206</u>	Not Issued	163	05/31/1995	SEMICONDUCTOR ACCELERATION SENSOR	YAMAMOTO, MASAHIRO
<u>08436615</u>	<u>5647816</u>	150	05/08/1995	AUTOMATIC TRANSMISSION	YAMAMOTO, MASAHIRO
<u>08436577</u>	Not Issued	161	05/08/1995	AUTOMATIC TRANSMISSION	YAMAMOTO, MASAHIRO
<u>08391577</u>	Not Issued	161	02/21/1995	DISPLAY-INTEGRATED COORDINATE INPUT DEVICE	YAMAMOTO, MASAHIRO
<u>08327415</u>	<u>5552654</u>	150	10/21/1994	ELECTROSTATIC ACTUATOR	YAMAMOTO, MASAHIRO
<u>08325833</u>	<u>5620328</u>	150	10/19/1994	CONNECTOR RELEASE MECHANISM	YAMAMOTO, MASAHIRO
<u>08211627</u>	Not Issued	161	04/20/1994	APPARATUS AND METHOD FOR ELECTROSTATIC POWDER COATING	YAMAMOTO, MASAHIRO
<u>08182696</u>	<u>5415044</u>	250	01/13/1994	SEMICONDUCTOR ACCELERATION SENSOR INCLUDING MEANS FOR DETECTING WEIGHT DETACHMENT	YAMAMOTO, MASAHIRO
<u>08171614</u>	<u>5460044</u>	150	12/22/1993	SEMICONDUCTOR ACCELERATION	YAMAMOTO, MASAHIRO

<u>08136800</u>	<u>5569041</u>	150	10/14/1993	DETECTING APPARATUS	YAMAMOTO, MASAHIRO
<u>08043560</u>	<u>5446453</u>	150	04/07/1993	LOW INSERTION FORCE ELECTRICAL CONNECTOR	YAMAMOTO, MASAHIRO
<u>08036684</u>	Not Issued	161	03/25/1993	RESIDENTIAL FACILITY CONTROL SYSTEM	YAMAMOTO, MASAHIRO
<u>08001714</u>	<u>5376056</u>	150	01/07/1993	SEMICONDUCTOR ACCELERATION DETECTOR	YAMAMOTO, MASAHIRO
<u>08001713</u>	<u>5429561</u>	150	01/07/1993	SHIFT CONTROL SYSTEM IN AUTOMATIC TRANSMISSION	YAMAMOTO, MASAHIRO
<u>07982410</u>	<u>5237145</u>	150	11/27/1992	SHIFT CONTROL SYSTEM WITH ENGAGEMENT PRESSURE AS A FUNCTION OF TORQUE INPUT AND THE TYPE OF SHIFTS	YAMAMOTO, MASAHIRO
<u>07846009</u>	<u>5231879</u>	150	03/04/1992	WIRE CUT ELECTRIC DISCHARGE MACHINING METHOD	YAMAMOTO, MASAHIRO
<u>07741300</u>	<u>5100335</u>	150	08/07/1991	SEMICONDUCTOR ACCELERATION DETECTING APPARATUS	YAMAMOTO, MASAHIRO
<u>07628118</u>	<u>5153661</u>	150	12/14/1990	SEALED ELECTRICAL CONNECTOR AND SEAL RING THEREFOR	YAMAMOTO, MASAHIRO
<u>07618394</u>	<u>5032225</u>	150	11/27/1990	APPARATUS AND METHOD FOR LASER RECORDING WITH MEANS FOR FEEDING A MATERIAL	YAMAMOTO, MASAHIRO
<u>07582066</u>	<u>5064984</u>	150	09/14/1990	TEMPERATURE CONTROLLED METHOD OF COATING A PAPER WEB	YAMAMOTO, MASAHIRO
<u>07390846</u>	<u>5001321</u>	150	08/08/1989	POWER SUPPLY UNIT ELECTRIC DISCHARGE MACHINING APPARATUS	YAMAMOTO, MASAHIRO
<u>07314723</u>	<u>4968266</u>	150	02/23/1989	WIRE ELECTRODE SUPPLYING DEVICE FOR USE IN A WIRE CUT ELECTRIC DISCHARGE MACHINING APPARATUS	YAMAMOTO, MASAHIRO
<u>07310587</u>	<u>4981748</u>	150	02/15/1989	SURFACE MOUNT CONNECTOR	YAMAMOTO, MASAHIRO
				HEAT TRANSFER RECORDING SHEET	YAMAMOTO, MASAHIRO

<u>07277011</u>	<u>4917917</u>	150	11/28/1988	ELECTROSTATICALLY POWDER COATING METHOD AND APPARATUS THEREFOR	YAMAMOTO, MASAHIRO
<u>07244128</u>	<u>5086230</u>	150	09/14/1988	APPARATUS FOR FORMING, CORRECTING PATTERN	YAMAMOTO, MASAHIRO
<u>07119068</u>	<u>4868854</u>	150	11/10/1987	ESTABLISHMENT OF BIT SYNCHRONIZATION IN A DATA TRANSMITTING/RECEIVING SYSTEM	YAMAMOTO, MASAHIRO
<u>07114287</u>	Not Issued	166	10/29/1987	SEMICONDUCTOR DEVICE CONSTITUTING BIPOLAR TRANSISTOR	YAMAMOTO, MASAHIRO
<u>07079255</u>	<u>4804823</u>	150	07/29/1987	CERAMIC HEATER	YAMAMOTO, MASAHIRO
<u>07027187</u>	<u>4747731</u>	150	03/17/1987	AUTOMATIC POWDER FEEDING APPARATUS	YAMAMOTO, MASAHIRO
<u>07022765</u>	<u>4805069</u>	150	03/06/1987	POWDER CHARGING APPARATUS AND ELECTROSTATIC POWDER PAINTING APPARATUS	YAMAMOTO, MASAHIRO
<u>07017351</u>	<u>4790485</u>	150	02/24/1987	GUN HEAD FOR POWDER PAINTING	YAMAMOTO, MASAHIRO
<u>06921820</u>	<u>4874632</u>	150	10/17/1986	PROCESS FOR FORMING PATTERN FILM	YAMAMOTO, MASAHIRO
<u>06630069</u>	Not Issued	161	07/12/1984	MAGNETIC HEAD	YAMAMOTO, MASAHIRO
<u>06600280</u>	<u>4632808</u>	150	04/13/1984	CHEMICAL MANIPULATOR	YAMAMOTO, MASAHIRO
<u>06574093</u>	<u>4698476</u>	150	01/05/1984	AUTOMATIC WIRE FEEDER FOR AN ELECTRICAL DISCHARGE MACHINING APPARATUS INCLUDING COMBINED CLEANING FLUID AND WORKING FLUID SUPPLY SYSTEMS	YAMAMOTO, MASAHIRO
<u>06556006</u>	Not Issued	161	11/29/1983	DNA ANALYSER	YAMAMOTO, MASAHIRO

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Application#	Patent#	Status	Date Filed	Title	Inventor Name
<u>09471326</u>	<u>6243638</u>	150	12/23/1999	ELECTRONIC TRANSMISSION CONTROL SYSTEM FOR AUTOMOTIVE VEHICLE WITH CONTINUOUSLY VARIABLE AUTOMATIC TRANSMISSION	YAMAMOTO, MASAHIRO
<u>09386330</u>	Not Issued	061	08/30/1999	PURCHASE REQUEST APPROVING APPARATUS AND PURCHASE REQUEST APPROVING METHOD	YAMAMOTO, MASAHIRO
<u>09381906</u>	<u>6199700</u>	150	01/27/2000	CUSHIONING MATERIAL FOR PACKAGING	YAMAMOTO, MASAHIRO
<u>09373624</u>	<u>6118801</u>	150	08/13/1999	GALLIUM NITRIDE-BASED COMPOUND SEMICONDUCTOR LASER AND METHOD OF MANUFACTURING THE SAME	YAMAMOTO, MASAHIRO
<u>09368005</u>	<u>6258433</u>	150	08/03/1999	OPTICAL RECORDING MEDIUM	YAMAMOTO, MASAHIRO
<u>09367488</u>	<u>6245391</u>	150	08/17/1999	POWDER FLUIDIZED BED AND COATING METHOD UTILIZING A CIRCULATING POWDER STREAM	YAMAMOTO, MASAHIRO
<u>09352874</u>	<u>6236547</u>	150	07/13/1999	ZENER ZAPPING DEVICE AND ZENER ZAPPING METHOD	YAMAMOTO, MASAHIRO
<u>09263213</u>	<u>6252894</u>	150	03/05/1999	SEMICONDUCTOR LASER USING	YAMAMOTO, MASAHIRO

<u>09158988</u>	<u>6048372</u>	150	09/23/1998	GALLIUM NITRIDE SERIES COMPOUND SEMICONDUCTOR	YAMAMOTO, MASAHIRO
<u>09145133</u>	<u>6042501</u>	150	09/01/1998	METHOD OF PRODUCING AN ELECTRODE PLATE USED FOR A LITHIUM SECONDARY BATTERY AND A LITHIUM SECONDARY BATTERY	YAMAMOTO, MASAHIRO
<u>09115239</u>	<u>6064079</u>	150	07/14/1998	VARIABLE CONTROL DEVICE FOR A CONTINUOUSLY VARIABLE TRANSMISSION	YAMAMOTO, MASAHIRO
<u>09089130</u>	<u>6080599</u>	150	06/02/1998	GALLIUM NITRIDE-BASED COMPOUND SEMICONDUCTOR DEVICE	YAMAMOTO, MASAHIRO
<u>09073984</u>	<u>6276618</u>	150	05/07/1998	SEMICONDUCTOR OPTOELECTRIC DEVICE AND METHOD OF MANUFACTURING THE SAME	YAMAMOTO, MASAHIRO
<u>09028001</u>	<u>5943789</u>	150	02/23/1998	ELECTROSTATIC POWDER SPRAY GUN	YAMAMOTO, MASAHIRO
<u>09026941</u>	<u>6242761</u>	150	02/20/1998	TREATMENT APPARATUS FOR SEASONING WOOD FOR STRUCTURAL USES	YAMAMOTO, MASAHIRO
<u>09026686</u>	<u>6281524</u>	150	02/20/1998	NITRIDE COMPOUND SEMICONDUCTOR LIGHT EMITTING DEVICE	YAMAMOTO, MASAHIRO
<u>09017238</u>	<u>5994205</u>	150	02/02/1998	SEMICONDUCTOR LIGHT-EMITTING DEVICE	YAMAMOTO, MASAHIRO
<u>08949623</u>	<u>5889406</u>	150	10/14/1997	METHOD OF SEPARATING SEMICONDUCTOR DEVICES	YAMAMOTO, MASAHIRO
<u>08867759</u>	<u>5908367</u>	150	06/03/1997	INDUCTANCE-CHANGE DETECTION APPARATUS	YAMAMOTO, MASAHIRO
				FLOWRATE CONTROL VALVE AND CONTINUOUSLY VARIABLE AUTOMATIC TRANSMISSION PROVIDED WITH SAME	YAMAMOTO, MASAHIRO

08853508	5891588	150	05/08/1997	LITHIUM SECONDARY BATTERY	YAMAMOTO, MASAHIRO
08796547	5821601	250	02/06/1997	BIPOLAR SEMICONDUCTOR INTEGRATED CIRCUIT WITH A PROTECTION CIRCUIT	YAMAMOTO, MASAHIRO
08782856	5945212	150	01/13/1997	INSULATING FILM/TREATING AGENT HAVING EXTREMELY EXCELLENT FILM CHARACTERISTICS AND PRODUCTION METHOD FOR NON- ORIENTED ELECTRICAL STEEL SHEET USING THE TREATING AGENT	YAMAMOTO, MASAHIRO
08729407	5854421	250	10/11/1996	SEMICONDUCTOR SENSORS AND METHOD FOR ADJUSTING THE OUTPUT	YAMAMOTO, MASAHIRO
08714612	5747150	150	09/16/1996	ELECTROSTATIC POWDER COATING METHOD	YAMAMOTO, MASAHIRO
08623829	5864171	150	03/29/1996	SEMICONDUCTOR OPTOELECTRIC DEVICE AND METHOD OF MANUFACTURING THE SAME	YAMAMOTO, MASAHIRO
08576197	5704643	150	12/22/1995	UTILITY VEHICLE	YAMAMOTO, MASAHIRO
08552073	5614673	150	11/02/1995	ACCELERATION SENSING DEVICE	YAMAMOTO, MASAHIRO
08551138	5714280	150	10/31/1995	LITHIUM SECONDARY BATTERY	YAMAMOTO, MASAHIRO
08526917	Not Issued	163	09/12/1995	PHOTOGRAPHIC PRINTING METHOD AND APPARATUS	YAMAMOTO, MASAHIRO
08526700	5693963	150	09/11/1995	COMPOUND SEMICONDUCTOR DEVICE WITH NITRIDE	YAMAMOTO, MASAHIRO
08515976	5711489	150	08/16/1995	ELECTROSTATIC POWDER COATING METHOD AND APPARATUS	YAMAMOTO, MASAHIRO
08515298	Not Issued	166	08/15/1995	METHOD AND APPARATUS FOR ELECTROSTATIC POWDER COATING	YAMAMOTO, MASAHIRO
08512633	Not Issued	166	08/08/1995	SEMICONDUCTOR ACCELERATION SENSOR	YAMAMOTO, MASAHIRO
08512632	5589634	150	08/08/1995	SEMICONDUCTOR ACCELERATION	YAMAMOTO, MASAHIRO

<u>08277212</u>	<u>5454271</u>	150	07/19/1994	SENSOR FOR DETECTING ACCELERATION IN ORTHOGONAL DIRECTIONS	YAMAMOTO, MASAHIRO
<u>08234762</u>	<u>5492491</u>	150	04/28/1994	METHOD AND APPARATUS FOR MEASURING POWDER FLOW RATE	YAMAMOTO, MASAHIRO
<u>08225207</u>	Not Issued	166	04/08/1994	CRT ANODE CAP TERMINAL	YAMAMOTO, MASAHIRO
<u>08016332</u>	<u>5411399</u>	150	02/11/1993	INSULATING FILM TREATING AGENT HAVING EXTREMELY EXCELLENT FILM CHARACTERISTICS AND PRODUCTON METHOD FOR NON- ORIENTED ELECTRICAL STEEL SHEET USING THE TREATING AGENT	YAMAMOTO, MASAHIRO
<u>08010811</u>	<u>5439088</u>	150	01/29/1993	CIRCUIT BOARD CONNECTOR	YAMAMOTO, MASAHIRO
<u>07941115</u>	Not Issued	161	11/06/1992	AUTOMATIC TRANSMISSION WITH PASSAGES CONNECTING APPLY AND CANCEL CHAMBERS	YAMAMOTO, MASAHIRO
<u>07714949</u>	Not Issued	161	06/13/1991	SHEET CLAMPING DEVICE IN PRINTER	YAMAMOTO, MASAHIRO
<u>07650952</u>	<u>5146240</u>	150	02/05/1991	WIRE CUT TYPE ELECTRIC DISCHARGE MACHINE	YAMAMOTO, MASAHIRO
<u>07646584</u>	Not Issued	164	01/28/1991	IMAGE FORMING APPARATUS WITH PLURAL DOT DENSITIES	YAMAMOTO, MASAHIRO
<u>07426430</u>	<u>5071671</u>	150	10/24/1989	SEALED ELECTRICAL CONNECTOR AND SEAL RING THEREFOR	YAMAMOTO, MASAHIRO
<u>07415166</u>	<u>5000690</u>	150	09/28/1989	PROCESS FOR FORMING PATTERN FILMS	YAMAMOTO, MASAHIRO
<u>07412552</u>	<u>4994880</u>	150	09/25/1989	ELECTRICAL CONNECTOR FOR MODULE PACKAGING	YAMAMOTO, MASAHIRO
<u>07353421</u>	<u>5006692</u>	150	05/18/1989	SEMICONDUCTOR DEVICE CONSTITUTING BIPOLAR TRANSISTOR	YAMAMOTO, MASAHIRO
				WIRE ELECTRODE SUPPLYING DEVICE FOR USE IN A WIRE CUT ELECTRIC	YAMAMOTO, MASAHIRO

						DISCHARGE MACHINING APPARATUS	
07094519	4797711	150	09/09/1987			IMAGE SCANNING APPARATUS	YAMAMOTO, MASAHIRO
06714019	4731686	150	03/19/1985			MAGNETIC HEAD	YAMAMOTO, MASAHIRO
06706478	Not Issued	166	02/28/1985			PROCESS FOR FORMING PATTERN FILM	YAMAMOTO, MASAHIRO
06177581	4321893	150	08/13/1980			TWO-STROKE ENGINE HAVING VARIABLE EXHAUST PORT TIMING	YAMAMOTO, MASAHIRO

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Inventor Name Search Result

Your Search was:

Last Name = YAMAMOTO
First Name = MASAHIRO

Application#	Patent#	Status	Date Filed	Title	Inventor Name
<u>09427621</u>	Not Issued	161	10/27/1999	NITRIDE-BASED SEMICONDUCTOR ELEMENT AND METHOD FOR MANUFACTURING THE SAME	YAMAMOTO, MASAHIRO
<u>09418025</u>	<u>6316785</u>	150	10/14/1999	A NITRIDE-COMPOUND SEMICONDUCTOR DEVICE	YAMAMOTO, MASAHIRO
<u>09412054</u>	<u>6390918</u>	150	10/04/1999	VIDEO GAME APPARATUS, MODEL DISPLAY METHOD FOR VIDEO GAMES, AND READABLE RECORDING MEDIUM FOR STORING MODEL DISPLAY PROGRAM FOR VIDEO GAMES	YAMAMOTO, MASAHIRO
<u>09404364</u>	<u>6294216</u>	150	09/24/1999	VIBRATING METHOD FOR CHARGING POWDER	YAMAMOTO, MASAHIRO
<u>09386331</u>	Not Issued	071	08/30/1999	PURCHASE REQUEST APPARATUS AND PURCHASE REQUEST METHOD	YAMAMOTO, MASAHIRO
<u>09385047</u>	Not Issued	041	08/30/1999	PURCHASE REQUEST SYSTEM AND METHOD	YAMAMOTO, MASAHIRO
<u>09380048</u>	<u>6257412</u>	150	12/02/1999	FOLDED CUSHIONING MATERIAL FOR PACKAGING	YAMAMOTO, MASAHIRO
<u>09373624</u>	<u>6118801</u>	150	08/13/1999	GALLIUM NITRIDE-BASED COMPOUND SEMICONDUCTOR LASER AND METHOD OF MANUFACTURING THE	YAMAMOTO, MASAHIRO

http://expoweb1.8002/cgi-bin/expo/InvInfo/invquery.pl?FAM NAM=yamamoto&GIV NAM=masahiro&MID NAM=&NEXT P... 7/11/03

<u>08360298</u>	Not Issued	161	12/21/1994	ELECTROSTATIC POWDER COATING METHOD	YAMAMOTO, MASAHIRO
<u>08045726</u>	<u>5410915</u>	150	04/14/1993	CAPACITIVE ACCELERATION DETECTOR	YAMAMOTO, MASAHIRO
<u>08044003</u>	<u>5379640</u>	150	04/08/1993	SEMICONDUCTOR ACCELERATION DETECTING APPARATUS	YAMAMOTO, MASAHIRO
<u>07773664</u>	<u>5273812</u>	250	12/24/1991	NON-FOGGING SHEET AND ITS PRODUCTION	YAMAMOTO, MASAHIRO
<u>07772797</u>	<u>5183986</u>	150	10/08/1991	WIRE-TYPE ELECTRIC DISCHARGE MACHINING SYSTEM CAPABLE OF MAGNETICALLY COLLECTING MATERIAL THAT HAS BEEN REMOVED FROM A WORKPIECE AND CONFIRMING THE MAGNETIC ATTRACTION	YAMAMOTO, MASAHIRO
<u>07755225</u>	<u>5177334</u>	150	09/05/1991	WIRE CUT ELECTRIC DISCHARGE MACHINING APPARATUS	YAMAMOTO, MASAHIRO
<u>07750759</u>	<u>5150598</u>	150	08/22/1991	APPARATUS FOR SCRIBING GRAIN-ORIENTED ELECTRICAL STEEL STRIP	YAMAMOTO, MASAHIRO
<u>07480824</u>	Not Issued	166	02/16/1990	APPARATUS FOR SCRIBING GRAIN-ORIENTED ELECTRICAL STEEL STRIP	YAMAMOTO, MASAHIRO
<u>07457788</u>	Not Issued	166	12/29/1989	WIRE CUT ELECTRIC DISCHARGE MACHINING METHOD	YAMAMOTO, MASAHIRO
<u>07457787</u>	<u>5073691</u>	150	12/29/1989	WIRE ELECTRODE FEEDING DEVICE IN WIRE CUT ELECTRIC DISCHARGE MACHINE	YAMAMOTO, MASAHIRO

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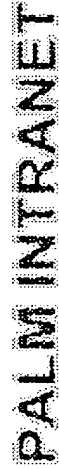
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Your Search was:

Last Name = ATSUMI

First Name = YOSHINORI

Application#	Patent#	Status	Date Filed	Title	Inventor Name
09932050	Not Issued	030	08/17/2001	NON-AQUEOUS ELECTROLYTE SECONDARY CELL	ATSUMI, YOSHINORI
09254838	6120938	150	07/01/1999	NON-AQUEOUS ELECTROLYTE SECONDARY CELL	ATSUMI, YOSHINORI
09254828	6139815	150	07/14/1999	LITHIUM HYDROGEN TITANATES AND PROCESS FOR THE PREPARATION THEREOF	ATSUMI, YOSHINORI
07713822	5180888	150	06/12/1991	CONDUCTIVE BONDING AGENT AND A CONDUCTIVE CONNECTING METHOD	ATSUMI, YOSHINORI
07602716	5123986	150	10/24/1990	CONDUCTIVE CONNECTING METHOD	ATSUMI, YOSHINORI
07436295	5001302	150	11/13/1989	CONNECTING STRUCTURE FOR AN ELECTRONIC PART	ATSUMI, YOSHINORI
07432135	4999460	150	11/06/1989	CONDUCTIVE CONNECTING STRUCTURE	ATSUMI, YOSHINORI

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atsumi

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Your Search was:

Last Name = OHTA

First Name = YASUO

Application#	Patent#	Status	Date Filed	Title	Inventor Name
<u>10404852</u>	Not Issued	020	04/02/2003	HIGH STRENGTH POLYETHYLENE FIBERS AND THEIR APPLICATIONS	OHTA, YASUO
<u>10404758</u>	Not Issued	020	04/02/2003	HIGH STRENGTH POLYETHYLENE FIBERS AND THEIR APPLICATIONS	OHTA, YASUO
<u>10263801</u>	Not Issued	030	10/04/2002	ELASTIC WOVEN OR KNITTED FABRIC, AND CUSHIONING MATERIAL AND SEAT USING THE SAME	OHTA, YASUO
<u>10189130</u>	Not Issued	030	07/02/2002	ELECTROLESS GOLD PLATING BATH AND METHOD	OHTA, YASUO
<u>09932050</u>	Not Issued	030	08/17/2001	NON-AQUEOUS ELECTROLYTE SECONDARY CELL	OHTA, YASUO
<u>09806685</u>	Not Issued	095	04/04/2001	HIGH STRENGTH POLYETHYLENE FIBERS AND THEIR APPLICATIONS	OHTA, YASUO
<u>09727673</u>	Not Issued	093	03/13/2001	PROCESS OF MAKING HIGH-STRENGTH POLYETHYLENE FIBERS	OHTA, YASUO
<u>09490928</u>	<u>6383269</u>	150	01/25/2000	ELECTROLESS GOLD PLATING SOLUTION AND PROCESS	OHTA, YASUO
<u>09103564</u>	<u>6288469</u>	150	06/24/1998	FIXING DEVICE AND METHOD FOR A BRUSH HOLDER	OHTANI, YASUO
<u>08664340</u>	<u>5703901</u>	150	06/14/1996	CALCINATION FURNACE	OHTANI, YASUO

<u>08478804</u>	<u>5547626</u>	150	06/07/1995	PROCESS OF MAKING HIGH-TENACITY POLYETHYLENE FIBER	OHTA, YASUO
<u>08355910</u>	<u>5443904</u>	150	12/14/1994	HIGH-TENACITY POLYETHYLENE FIBER	OHTA, YASUO
<u>08080570</u>	<u>5559826</u>	150	06/21/1993	CALCINATION FURNACE	OHTANI, YASUO
<u>07540462</u>	<u>5128415</u>	150	06/19/1990	PROCESS FOR PREPARING POLYETHYLENE ARTICLES OF HIGH TENSILE STRENGTH AND MODULUS AND LOW CREEP AND ARTICLES THUS OBTAINED	OHTA, YASUO
<u>07259486</u>	Not Issued	163	10/18/1988	FLEXIBLE LINEAR COMPOSITE MEMBER	OHTA, YASUO
<u>07224918</u>	Not Issued	166	06/28/1988	PROCESS FOR PREPARING POLYETHYLENE ARTICLES OF HIGH TENSILE STRENGTH AND MODULUS AND LOW CREEP AND ARTICLES THUS OBTAINED	OHTA, YASUO
<u>07120163</u>	Not Issued	166	11/12/1987	FLEXIBLE LINEAR COMPOSITE MEMBER	OHTA, YASUO
<u>06891254</u>	<u>4877730</u>	150	07/28/1986	MICROBIOLOGICAL METHOD FOR PRODUCING ETHYLENE	OHTA, YASUO
<u>06877927</u>	Not Issued	166	06/24/1986	FLEXIBLE LINEAR COMPOSITE MEMBER	OHTA, YASUO

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